

EPA Comments on the Proposed
Interim Measure/Interim Remedial Action
for the Solar Ponds, Operable Unit 4

Specific Comments

Executive Summary, page ES-1. The last sentence of this section mentions that this remedy is expected to pose a minimal risk to the health of workers, the general public, and the environment. An explanation of why this is expected needs to be included.

Section 1.2, Statement of Basis and Purpose, page 1-1-2. Elaborate on why this IM/IRA is necessary. Suggest adding the following: "This IM/IRA is necessary to stabilize the operable unit to allow for subsequent remediation of Operable Unit 4."

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Section 1.3, Assessment of the Site, page 1-2. This section needs to discuss the risks associated with the solar ponds prior to any remedial action taking place. This should include identification of pathways, receptors and the risks associated with the nature of contamination. The ponds constitute a current source of contaminant migration to ground water and one of the reasons for conducting this IM/IRA is to remove the source so as to prevent continuation of ground water contamination.

Section 1.5, Description of the Selected Remedy, page 1-3, 2nd paragraph. It is our understanding that Pond 207-C also requires dewatering. If this is not the case, please present this reasoning.

Section 2.2, Site History and Enforcement Activities, page 2-17, 2nd paragraph. Revise as follows: ". . . CERCLA regulations apply when hazardous materials substances have been released from abandoned or uncontrolled hazardous waste sites as well as releases at Federal Facilities. CERCLA regulations also apply to releases from operating facilities that may pose a threat to human health and/or the environment. DOE, EPA, and the State of Colorado signed a Federal Facilities Agreement (also known as the IAG) under both RCRA and CERCLA which governs the environmental restoration activities at RFP, including this IRA. The environmental restoration activities Some-cleanup-areas-at the RFP fall under the jurisdiction of both laws.

Table 2.1, page 2-19. Pond 207-B South should be portrayed on this table.

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Section 2.3.2, Ponds 207-B North, Center, and North, page 2-21. The ultimate disposition of the sludge and liners should be presented.

Section 2.3.3, Pond 207-C, page 2-21. Show the data supporting the conclusions regarding concentrations in Pond 207-C.

Section 2.4, Community Participation, page 2-22-23. Revise the following sentence to be consistent with § 1.B.10 of Appendix I of the IAG: "DOE will not commence any the-operation-of remedial/corrective activities associated with this IM/IRA ..."

In addition, this section is inconsistent with the IAG. The Statement of Work outlined in the IAG (page 11) with regard to IM/IRAs states that "DOE shall not commence any remedial/corrective activities associated with an IM/IRA until EPA and the State have approved the Final IM/IRA Decision Document and Responsiveness Summary" and "DOE shall make the EPA and State approved Final IM/IRA Decision Document and Responsiveness Summary available to all interested parties 10 days prior commencing any field remedial/corrective activities associated with the IM/IRA". This section needs to be changed accordingly to reflect consistency with the IAG.

Table 2-2, page 2-23. Where does this data values come from? A reference of the source of this data or the actual data needs to be presented.

Section 2.5, Scope and Role of the IM/IRA, page 2-24. The first sentence of the second paragraph should read instead " This IM/IRA is intended to be consistent with the final remedy.....

Section 2.5.1, Site and Local Hydrogeology, page 2-13-15. This section needs to include more specifics regarding the following:

- Classification of the ground water in both aquifers;
- Use of the aquifer as a drinking water source and future potential; and
- Leaching of the 207 ponds into the upper aquifer.

Section 2.6, Summary of Site Risks, page 2-25. The risks being discussed are supposed to be those which the interim action addresses and reduces. The health effects associated with the operation of the flash evaporator system are incorrectly characterized as the site risks. Because this is an interim action, a qualitative risk analysis of the risks associated with the solar ponds is all that is required. This should include all the hazards posed if no remediation activity is conducted. Pathways, receptors and the nature of contamination need to be identified.

Revise 1st paragraph as follows: "... of the SEP's partial closure actions and to stabilize the operable unit by removing the source materials. As such, the IM/IRA ... facilitate pondcrete operations, and site closure, and remedial action. The proposed actions ..."

Revise 2nd paragraph as follows: "... to facilitate pondcrete operations, and site closure, and remedial action. The

Summary of Site Risks ..."

The discussion in 3rd paragraph raises many more questions than it answers. What is the basis for DOE's assumption regarding the ground water pathway? Where is the data? What about groundwater interface with surface water. What about potential receptors? This paragraph should be dropped in favor of an acknowledgement that this IM/IRA is not intended to characterize or remediate the ground water, other than the ground water intercepted by the ITS. Ground water will be fully characterized and remediated as part of the full RI/FS process for OU4.

Revise 4th Paragraph by deleting the first two sentences (see above comment).

Section 2.6.1, Pathway Exposure assessment, page 2-26. The ITS is not capturing all the ground water flow. Ground water is migrating beyond the ITS. There may be a potential for on-site and off-site receptors. Therefore, the conceptual exposure pathways in figure 2-7 must address the ground water pathway as potential risk to on-site or off-site receptors.

If the HEPA filters for the system are installed on the building and not on the treatment units, then there may be a potential for workers exposure to any aerosolized particulate released from the units. This needs to be addressed and explained in this section.

Revise first sentence as follows: "The conceptual environmental exposure pathway ~~for~~ resulting from the proposed IM/IRA ..."

Case A: Revise as follows: "... presently there is no identified contaminant receptor; rather, a portion of the ground water ..."

Figure 2-7: Acknowledge that the groundwater pathway/receptor is not determined and that the ITS only partially intercepts the contamination. Also, measures must be taken after the Case B Source to eliminate the potential for aerosol releases.

Section 2.6.2, Chemicals of Concern, page 2-28. Analytical data of the pond water characterization needs to be included in this document. It is impossible to identify the chemicals of concern, radionuclides and metals without having validated analytical data available.

Section 2.6.2.2, Metals, page 2-29. What is the source of the analytical values for metals presented in this table?

Section 2:6.4, Risk Characterization, page 2-30. Delete the first sentence; the conclusion is not supported by data.

Section 3.0, Description and Analysis of Selected remedy, page 3-1. If the "No Action" alternative was evaluated, it should be discussed in much greater detail. Alternatively, delete the 2nd and 3rd sentences and replace with the following: "No other alternatives were evaluated since this remedy is limited in scope and is an interim action intended as a necessary initial step to facilitate remediation of OU4."

Section 3.1, Description of selected remedy, page 3-1. What will happen to the sludges in the ponds? Describe how much will be removed, if any, and the ultimate disposition of any removed. Also describe what dust suppression measures will be taken after the ponds are dewatered.

Elaborate on the pondcrete and saltcrete processes and on what is meant by the "acceptance criteria." In addition, elaborate on what is meant by the "allowable TDS limit" and on what is meant by the "re-use criteria."

Section 3.1.1, Treatment Systems Components, page 3-2. This section needs to explain any safety/operation features of the treatment units which will be used in case of an over pressure in either the VC or the flash evaporator units. If a valve is to be used to equalize the differential pressure across the units, then there will be air emissions from the units which may contain contaminated particulates posing a potential threat to the workers health and the environment. This needs to be addressed in this section.

In addition, elaborate on the training that the operators will receive.

Section 3.1.1.1, Lower Level Building 910, page 3-4. The tanks located in this area need to meet RCRA requirements before their use for storage. This section needs to explain what modifications are needed for the tanks to meet the RCRA requirements. Also, elaborate on how and when the tanks will be structurally and seismically qualified.

Section 3.1.1.2, Process Description, page 3-6. Where and how is the material retained in the duplex strainers and duplex filters to be disposed of? How much of this material is expected to be held up in the strainers and filters? This material may need to be handled as mixed waste.

This section mentions that the distillate tanks are going to be vented to the atmosphere. Is there any need for air emissions control devices associated with these tanks?

Section 3.1.1.2, Process Description, page 3-6. Is there a reason to be concerned about constituents released when the distillate tanks are vented?

Section 3.1.1.2, Process Performance, page 3-8. This section needs to discuss acceptable levels of organics and radioactivity in the distillate.

Section 3.1.1.2, Distillate Disposition Plan, page 3-8. State that the distillate will meet all performance objectives/remediation criteria (identified in the ARAR section) before it is injected into the Raw Water Header.

Section 3.1.1.2, Concentrate Disposition Plan, page 3-9. Describe the disposition of the pondcrete/saltcrete.

Section 3.1.1.2, Flow, Level and Spill Control, page 3-9. State why there will be no secondary containment for the surge tank. Also state that the distillate in the surge tank will meet all performance objectives and therefore a catastrophic release from the surge tank will not result in a release of contaminants that might threaten human health and the environment. Also, describe whether a catastrophic release will threaten the integrity of downstream physical structures.

Section 3.1.1.3, Flow, Level and Spill Control, page 3-9. The flow level controls of the tanks need to be automatic level controls. The tanks need to be designed with automatic pumps for transfer of liquids in case of a high level control.

Section 3.1.1.3, Sampling and Analytical Schedule, page 3-9. This section needs to justify using the same analytical parameters used for the Building 374 evaporators for analysis of pond water. Pond water characteristics are different than the water being treated in Building 374.

This document needs to present a list of the analytical parameters for which the produced distillate is going to be analyzed.

Revise 1st paragraph as follows: "... no adverse impact on the quality of the water discharged from the plant or emitted from cooling towers.

Paragraph a: Characterization of the pond water must be included in the IM/IRA decision document.

Paragraph c: Elaborate on the modifications that may be needed.

Paragraph d: The distillate must be monitored for all relevant hazardous constituents in order to show that the

performance objectives have been met. These must be specified.

Table 3.1: Elaborate on what is meant by "Routine" frequency. Elaborate on what is meant by "Per analysis plan."

Section 3.1.1.4, Operating Procedures, page 3-13. This paragraph provides exceedingly little information. Provide references and elaborate on all of the procedures identified.

Section 3.1.1.4, Spill response, Page 3-13. Provide reference and elaborate on what is meant by the "spill response procedure."

Section 3.1.2.1, Location of Tanks, page 3-15. DOE has expressed verbally that the location of the surge tanks has changed. Where is the new location of the tanks?

Section 3.1.3.2, Treatability Testing, page 3-18. The treatability testing conducted with simulated pond water was only intended to study the performance of the evaporators in relation to alkalinity of the water. There has not been any test conducted to evaluate the performance of the evaporators for organics and radionuclides. At this point it is premature to draw any conclusions about expected distillate purity with regards to organics and radionuclides.

Section 3.1.3.6, Assumptions, uncertainties and Contingencies, page 3-20. Describe how there is sufficient capacity in Pond A-3 to accommodate catastrophic failure of the tanks.

Section 3.1.4, Costs, page 3-21. Clarify how the \$8M estimated cost is consistent with the \$55M and \$24M estimates in the 5-Year Plan and the Site Specific Plan.

Table 3-2. Provide a footnote identifying the expected duration of the O&M costs.

Table 3.3, page 3-24. The final proposed decision document needs to include a schedule showing the specific dates for each of the activities to be conducted during this remedial action.

Section 3.2.5, Short-term Effectiveness, page 3-26-27. The last sentence on this page states that the forced evaporators will be equipped with HEPA filters thereby precluding the carry-over of radioactive particulate emissions. This addresses EPA's concern of the potential of radionuclides to be present in the distillate. However, DOE staff indicated verbally that the only place in the system where HEPA filters are going to be placed is at the vents of the Building 910. This creates confusion which needs to be resolved. If the evaporators are not equipped with the HEPAs, then this document needs to explain why it is not necessary.

This section also states that in the case of a catastrophic failure of a temporary surge tank, contingencies exist to prevent off-site migration of potentially contaminated water. This section needs to describe what those contingencies are. Summarize them and provide a reference.

Describe how VOAs from SEP liquids (not just from the ITS) will be addressed.

A variety of procedures are identified in paragraph 5. Specify and elaborate on these procedures. Also, identify when the standard operating procedures will be developed.

Section 3.2.6, Implementability, page 3-27. 2nd paragraph: Elaborate on how the storage and treatment systems "will be easily monitored to confirm performance." Elaborate on how the treatment system can be adjusted or modified.

3rd and 4th paragraphs: Define "administrative feasibility." Why are there no anticipated administrative feasibility problems or problems with availability of needed services and materials? Has DOE streamlined its procurement process for environmental restoration projects or otherwise taken steps to assure that environmental restoration commitments are met in a timely manner?

Section 4.2, Compliance with ARARs and Protection of Human health and the Environment, page 4-1. 3rd bullet: The NCP specifies that "[t]he 10^{-6} risk level shall be used as the point of departure for determining remediation goals ..." Revise accordingly.

2nd paragraph: Are ARARs to be met or not? If not, which ARAR waiver will be needed? The IM/IRA decision document must detail the ARARs that will be met. If ARARs cannot be met, then the decision document must identify an ARAR waiver for EPA approval. The paragraph's ambivalence with respect to ARAR compliance is inconsistent with § 3.2.2.

Section 4.3, Ambient or Chemical-specific requirements, page 4-4. 5th paragraph: Since the IM/IRA anticipates releases to the air, State and federal clean air regulations should also be examined. This should also be reflected in the tables at the rear of Chapter 4.

Discuss also that the IM/IRA is limited in scope and only those ARARs associated with the IM/IRA are evaluated. Specifically, those ARARs which are related to the effluent, sludge, air discharges and construction and operation of the treatment unit and tanks. All other ARARs, such as those related to ground water, will be addressed in the forthcoming ROD for OU4.

Section 4.3.1, Safe Drinking Water Act MCLs, page 4-5. According to EPA policy and guidance, proposed regulations yield TBCs, final regulations not yet effective yield Relevant and Appropriate requirements, and final rules which are effective are Applicable requirements. Therefore, revise as follows: "...and will be regarded as applicable relevant-and-appropriate at that time. For purposes of ... are, therefore, relevant and appropriate ~~proposed-TBC~~ and are identified in Table 4.3." Table 4.3 must also be revised in accordance with these revisions.

Section 4.3.2, RCRA Ground Water Protection Standards, page 4-5. Revise as follows: "... RCRA (Subpart F) regulations are considered applicable ARAR for ground water remediation."

Describe how background concentrations are to be determined. If they have been determined, describe what they are and how they were determined.

Section 4.3.3, Colorado WQCC Standards for Surface Water, page 4-6. 2nd paragraph: The logic in this paragraph is flawed. Site specific standards may in fact be ARARs. However, they may also be waived. Therefore, revise the document to reflect appropriate State site specific standards as ARARs, and propose ARAR waivers if necessary.

Section 4.3.5, CWA Ambient Water Quality Criteria (AWQC), page 4-7. 1st and 2nd paragraphs: Since "AWQC may be considered relevant and appropriate", AWQC must be identified as relevant and appropriate in Table 4.3.

2nd paragraphs: The argument that a State standard not yet of general applicability is not an ARAR is false. It is an ARAR which might be waived. Revise accordingly.

Section 4.3.6, Protection of Human Health and the Environment, page 4-8. DOE must assure that the sum of the cancer risks are less than 10^{-4} (at least for those constituents where the detection limits are greater than the 10^{-4} level) and attempt to achieve a 10^{-6} level. Therefore, revise as follows: "With respect to carcinogens, cumulative cancer risk should be less than 10^{-6} , but no greater than 10^{-4} ..."

Section 4.5, Performance, Design, or other Action Specific Requirements, page 4-9. LDR is relevant to the disposition of precipitate and pondcrete/saltcrete. Revise accordingly.

Provide a table which identifies and summarizes the performance standards (i.e., effluent concentrations) combining the most stringent ARARs, Hazard Quotients, and Risk concentrations which are protective. These standards would be applied to the distillate and to air releases. The distillate

and air must be monitored to assess compliance with these standards.

Table 4.5, Environmental Impact of Federal Actions: The comment must be revised to state that EPA, CDH and DOE have not reached an agreement on NEPA applicability to CERCLA/RCRA actions. It is EPA's position that NEPA is not required for activities undertaken under the IAG. Additionally, since EPA makes the final determination on ARARs to be applied to the site (see IAG Paragraph 107), the "R&A" ARAR determination must be changed to "TBC".